Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

In vivo **MRI of single-wall carbon nanohorns through magnetite nanoparticle attachment** JIN MIYAWAKI, JST/SORST, MASAKO YUDASAKA, JST/SORST and NEC, HIDETO IMAI, NEC, HIDEKI YORIMITSU, HIROYUKI ISOBE, EIICHI NAKAMURA, The University of Tokyo, SUMIO IIJIMA, JST/SORST and NEC — Superparamagnetic magnetite (SPM) is used as a contrast agent in magnetic resonance imaging (MRI). Thus, the SPM-attachment to carbon nanotubes (CNTs) will enable to visualize motional behaviors of CNTs in the living body through MRI. We found that the strong attachment of the SPM nanoparticles (ca. 6 nm size) to one type of CNTs, single-wall carbon nanohorns (SWNHs), could be achieved through a deposition of iron acetate clusters on SWNHs in ethanol at room temperature, followed by heat-treatment in Ar. *In vivo* MRI visualized that the SWNHs attached with the SPM nanoparticles accumulated in several organs of mice when injected into mice via tail veins. This simple method for the SPM-attaching on CNTs would facilitate the toxicity assessment of CNTs and the applications of CNTs in bioscience and biotechnology.

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Date submitted: 15 Jan 2006 Electronic form version 1.4